



# OPTING **FOR** INDUSTRY

“When I was a small child I had noble ideas,” says **Una Ryan**. “I wanted to save lives.” She remembers at age six being inspired by her grandfather, a colonel in the British army, who had carried smallpox vaccine to the far reaches of the Himalayas and by watching a movie about children ravaged by polio.

Many years later—after having fled Singapore with her mother to escape the chaos of World War II, earned her undergraduate degree from Bristol University and her Ph.D. from Cambridge University in the UK, and established a successful career in academic research in the United States—her childhood vision is taking shape. Today, Una is chief executive officer of AVANT Immunotherapeutics, a company focused on developing and delivering vaccines.

## Improving people’s lives

Like Una, many women scientists are drawn to industry by the desire to more directly develop products that can help people. “I once saw in a store a T-shirt that said ‘if you are so smart why aren’t you rich?’” recalls Una. “I started thinking, ‘If I am so smart why haven’t I saved any lives?’” That is when Una decided to leave academia for industry, first at the chemical company Monsanto and then AVANT.

Her company develops vaccines for sale to travelers and the military. Similar vaccines are

made available to families in developing countries at a much lower cost. “There are all sorts of woes in industry but the opportunities to do good are enormous,” she says.

Juggling a demanding career and the raising of two daughters as a single mother was not easy, but Una says she always focused on the end goal. “The person who mentors me is that six-year-old child,” she says. Her advice to young students is to stay true to their passions. “If you want to be a scientist, be a scientist,” she says.



**Tona Gilmer** was also motivated from an early age to understand and treat disease. “My mother had a debilitating disease,” she says. “As a child I could not understand why no one would help her.” Following postdoctoral training, Tona was hired in 1989—when her son was three years old—by GlaxoSmithKline at its US headquarters in North Carolina to start working on developing breast cancer drugs. On March 13 of last year she achieved success when the breast cancer drug Tykerb was approved by the US Food and Drug Administration—the same day her son turned 21. “He came home from college for spring break and we had a double celebration,” she recalls.

The key to finding the right path is for young students to “look inside themselves and understand what is important to them, what inspires them, where the excitement comes from,” advises Tona. “Science takes a lot of commitment. To stick with it you have to have very clear ideas and goals.”

## Taking a different path

**Angela Flannery** found her way to industry without following a conventional education path. After leaving school at age 18 in the UK she did not enter university, but rather worked several years as a nurse and then a secretary in a health service laboratory in Liverpool. “When I saw the work doctors and scientists did I thought ‘This is something I would love to do,’” she recalls. As a single mother of two, she enrolled in university as a mature student.

Eager to get as far as she could in her studies, Angela completed a Ph.D. and then two postdocs in different areas of genetics. As she started looking for her next job she saw an advertisement from a pharmaceutical company that was just setting up a program to use genetics to identify targets for drugs. “I jumped at the chance,” says Angela. She has now been with the company, AstraZeneca, UK, for 12 years.

For students who are contemplating a career in science, her advice is “go for it!” “Research is taxing so you have to have a real passion for it. But science training is less difficult than the common perception. It is all doable, you just have to apply yourself and if you enjoy the subject then that will carry you a long way.”

And the rewards can be great. "Research training gives you a huge range of choices in the marketplace. Employers recognize the value of scientific thinking," she says. "You will never be short of a job." Angela feels that industry offers a broad scientific perspective and excellent career prospects. "Basically you can go as far as your determination takes you."

## A world of opportunities

**Vicki Sato** was always interested in medicine and disease. She chose graduate school over medical school the last year in college. "It was a late-breaking decision," she says laughing. But once her mind was made up, she followed the typical academic route from graduate student to postdoctoral fellow to associate professor at Harvard Medical School. After running a lab for seven years, not having yet obtained tenure, she started to look around for new opportunities.

After some searching she landed a position with the biotech company Biogen. She then moved to Vertex Pharmaceuticals, eventually becoming president of the company, where she helped develop drugs for HIV and hepatitis C. "My interest in science is very broad. Academic research requires a very clear focus, especially if you don't have tenure," says Vicki. "In industry I was able to learn about lots of different kinds of science, to think about the process of science and how it translates to medicines, to figure out where the money comes, and to learn about patents," she explains. "For me it placed science more squarely in the real world."

A mother of two daughters, now in their 20s, Vicki says managing career and family is never easy but the biotech industry has some pluses. "They have flex time and can be accommodating with family responsibilities," she says. "Because salaries are usually higher in industry than they are in academia, you can have more options for child care."

Vicki retired from Vertex Pharmaceuticals in 2000 and went back to Harvard, but in a different role. She is a professor of management practice at Harvard Business School, where she teaches courses on the process of drug discovery. Through her lectures, Vicki is now mentoring the next generation of industry scientists.

"You can have a very diverse and exciting life in science," she says. "If you have curiosity and passion, do everything you can to experience scientific research. Science is remarkable. It is a lever with which you can move the world."

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## Joining the team

**Barbara Weber** had two interests in college: medicine and research. So, after completing her medical training and getting research experience, she joined the faculty at the University of Pennsylvania, shuttling between lab bench and her clinic patients. In her lab she would identify genetic mutations that predispose women to breast cancer. But after many successes and rewards, she decided it was time to try something new.

“I had been studying genetic susceptibility to breast cancer for many years. With the completion of the human genome project, many tools and technologies became available that provided a path for finding medicines,” she says. That would have been a difficult path to follow within academia. So, in 2005 Barbara joined GlaxoSmithKline as vice president of discovery and translational medicine for the oncology division.

Although many of the same traits are needed to succeed in industry and academia—such as curiosity, creativity, and passion—industry has some unique requirements. “To do well here you have to want research to be applied, enjoy being part of a large team, be willing to work around consensus, and trust other people’s judgments and views,” explains Barbara.

But ultimately, what drives her and her colleagues is that “what we do every day has the possibility of turning into a drug that could ultimately be important to cancer patients.”